QUANTITY SURVEYING

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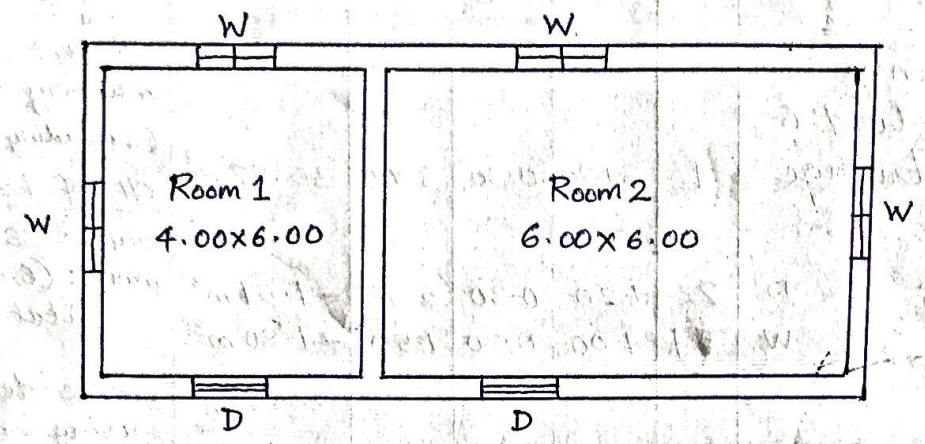
Q. Prepare an estimate of the building shown below:



Door D : 1.20 × 2.10
Window W : 1.00 × 1.50

Wall thickness = 30cm

Ans:

Sl. No.	Item of Work	No.	L	B	H	Quantity	Remarks
1.	Earthwork in excavation using manual or mechanical means, for foundation trenches	1	39.50	0.60	0.80	18.96 m^3	Assume foundation trench 60cm wide & 80cm deep. Centreline length outer: (4.00+6.00+0.30+0.30+6.00+0.30)×2 = 33.80m Inner = (6.00+0.30)−0.60 = 5.70m Total c/l length = 39.50m
2.	Plain Cement Concrete of mix 1:4:8 in foundation	1	39.50	0.60	0.20	4.74 m^3	Assume 20cm thickness c/L Length same as above = 39.50m
3.	Random Rubble Masonry in cement mortar 1:6.						Assume foundation of 60cm width & 60cm depth. Basement of size 45×45cm. c/L for foundation
	(a) In Foundation	1	39.50	0.60	0.60	14.22 m^3	outer = 33.80m inner = (6.00+0.30)−0.60 Total = 39.50m
	(b) In Basement	1	39.65	0.45	0.45	8.03 m^3	c/L for Basement outer = 33.80m inner = (6.00+0.30)−0.45 Total = 39.65m
						22.25 m^3	

4	Providing and laying Damp proof course of 25 mm thick with Cement concrete 1:2:4	1	39.65	0.45		17.84 m^2	Providing DPC (in m^2) over Basement. c/L length same as that of basement = 39.65m
5.	Brick masonry in cement mortar 1:6 in superstructure	1	39.80	0.30	3.00	35.82 m^3	Assume net height of masonry wall = 3.00m (excluding lintels etc.). c/L of brick masonry wall outer: 33.80 m inner: (6.00 + 0.30) − 0.30 Total = 39.80m
	Deductions: D	2	1.20	0.30	2.10	− 1.51 m^3	
	W	4	1.00	0.30	1.50	− 1.80 m^3	
						32.51 m^3	Write deductible quantities using negative sign
6	Centering & shuttering for roof slab						
	Room 1	1	4.00	6.00		24.00 m^2	
	Room 2	1	6.00	6.00		36.00 m^2	
						60.00 m^2	
7	Reinforced cement concrete of ~~grade~~ mix 1:1.5:3						Assume 10cm thick slab Assume 15cm thick lintel
	(a) Roof slab →	1	10.90	6.60	0.10	7.19 m^3	L = 0.30 + 4.00 + 0.30 + 6.00 + 0.30 = 10.90m
	(b) Lintel beams →	6	1.60	0.30	0.15	0.432 m^3	B = 0.30 + 6.00 + 0.30 = 6.60m } for roof slab
						7.62 m^3	
8.	Providing, cutting & placing in position steel reinforcement – TMT bars of grade Fe500 For roof slabs & lintel beams @ 80 kg/m^3 of concrete	for	7.62	m^3		609.60 kg	

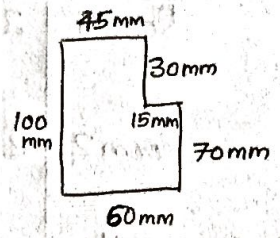
9.	12mm thick cement plaster of mix 1:6 on walls						Height of inner walls = height of brick masonry + Lintel beam thickness = 3.00 + 0.15 = 3.15 m
	(a) Inner walls:						
	Room 1	2	(4.00 + 6.00)		3.15	63.00 m^2	
	Room 2	2	(6.00 + 6.00)		3.15	75.60 m^2	Outer length of outer walls = 2[0.30 + 4.00 + 0.30 + 6.00 + 0.30 + 0.30 + 6.00 + 0.30] = 35.00m
	(b) Outer walls	1	35.00		3.25	113.75 m^2	
	(c) Deductions						Height of outer wall = 3.15 + 0.10 = 3.25 m
	D	2	1.20		2.10	− 5.04 m^2	
	W	4	1.00		1.50	− 6.00 m^2	Deduction for doors & windows shall be made for one face only because opening is > 0.5 m^2 & < 3 m^2.
						241.31 m^2	
10.	6mm thick cement plaster of mix 1:3 on ceiling.						
	Room 1	1	4.00	6.00		24.00 m^2	
	Room 2	1	6.00	6.00		36.00 m^2	
						60.00 m^2	
11.	Providing & laying in position cement concrete of specified grade 1:2:4 −						
	PCC flooring						
	Room 1	1	4.00	6.00	0.075	1.80 m^3	
	Room 2	1	6.00	6.00	0.075	2.70 m^3	
	Beneath Doors	2	1.20	0.30	0.075	0.05 m^3	
						4.55 m^3	
12	Providing & laying vitrified floor tiles of approved make laid on 20mm thick cement mortar 1:4						

	Room 1	1	4.00	6.00		24.00 m²
	Room 2	1	6.00	6.00		36.00 m²
	Beneath Doors	2	1.20	0.30		0.72 m²
						60.72 m²

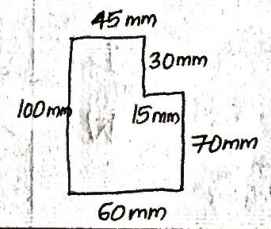
13. Providing woodwork in frames of doors, windows etc and fixed in position with holdfast etc. all complete.

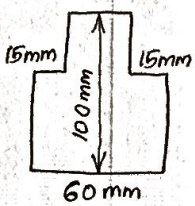
Door : 2 verticals	2×2	2.10	0.06	0.10		0.05 m³
1 horizontal	2×1	1.50	0.06	0.10		0.02 m³
Windows: 3 verticals	4×3	1.50	0.06	0.10		0.11 m³
2 horizontals	4×2	1.30	0.06	0.10		0.06 m³
						0.24 m³

Door frame



Window frame





14. White washing with lime to give an even shade on new work [or apply one coat of water-thinnable cement primer of approved brand on wall surface]

On walls (same quantity as Item No. 9)						241.31 m²
On ceiling (same quantity as Item No. 10)						60.00 m²
						301.31 m²

15. Finishing with emulsion paints on new work (2 or more coats)

On walls (same as Item 9)						241.31 m²
On ceiling (same as Item 10)						60.00 m²
						301.31 m²

16.	Applying priming coat with ready mixed pink or grey primer of approved brand on woodwork.						
	(a) on panelled doors (for both sides)	2 x2	1.20	2.10	1.30	13.10 m^2	Use coefficient 1.30 for panelled/framed/braced doors & windows.
	(b) on glazed windows (for both sides)	4 x2	1.00	1.50	0.80	9.60 m^2	Use coefficient 0.80 for glazed/gauzed doors & windows.
						22.70 m^2	
17.	Painting with synthetic enamel paint of approved brand to give an even shade (2 or more coats)						
	On panelled doors & glazed windows. [quantity same as Item no. 16]					22.70 m^2	